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Occurrence of Pacific Golden Plovers in The Netherlands; Historical Perspectives from the "Wilsternetters"

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Abstract.—The present wintering range of the Pacific Golden Plover (*Pluvialis fulva*) includes the northeastern tip of Africa, southern Asia, to Australia and New Zealand and much of the Pacific Ocean. We summarize evidence from the oral history of "wilsternetters" (artisanal hunters using an ancient, specialized netting device to capture grassland-shorebirds in daytime), as well as written records, to suggest that, until quite recently the wintering range of the Pacific Golden Plover may even have included the southern North Sea coast, mainly in the north of The Netherlands. Near the Zuiderzee (a large Dutch estuary that was closed off from the sea in 1932 and is now known as Lake IJsselmeer), the birds came inland to roost during spring tides, often in the company of Dunlin (*Calidris alpina*). However, Pacific Golden Plover were usually captured much further inland after the onset of severe winter weather, apparently after the birds had started moving away from their normal coastal winter habitat. Uniquely, Pacific Golden Plover wintering so far west and north appeared to show adaptations to cold (a thick and rather downy plumage) and unpredictable feeding conditions (a large fat store in midwinter). These special life-history features may have made it a distinct subspecies. Whether Dutch engineering, i.e. the loss of the Zuiderzee, played a role in their disappearance is probably beyond investigation. *Received 17 October 2001, accepted 21 November 2001.*

Key words.—Extinction, migration, mirror-image navigation, oral tradition, *Pluvialis fulva*, wintering.

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The present wintering range of the Pacific Golden Plover (*Pluvialis fulva*) is enormous. It stretches around half the world's circumference, from the northeastern tip of Africa, the Indian subcontinent, through southeast Asia, to Australia and New Zealand and also covers much of the Pacific Ocean, including the Hawaiian Islands (Hayman *et al.* 1986; Johnson and Connors 1996). We summarize evidence from oral history and written records that suggest that, within the last 50 years, the wintering range may have been even broader and included the southern North Sea coast, mainly the northern Netherlands. We considerably extend, and correct, earlier notes on this topic (Eenhuistra 1973; Jukema 1987a,b; Roselaar 1990).

Following several tantalizing oral and published statements on the apparently regular occurrence of small-sized and dark-plumaged golden plover in midwinter in The Netherlands, between 1985 and 1995, J. J. systematically interviewed 13 wilsternetters born between 1907 and 1933. Wilsternetters were professional hunters that used special nets, "wilsternets" (Eenshuistra 1973; Koopman and Hulscher 1979; Jukema *et al.* 2001), to catch Eurasian Golden Plovers (*Pluvialis apricaria*) during the non-breeding season.

The wilsternet, a large clap-net ca. 3.5 m wide and 25 m long, is quickly flipped over with the help of the wind by the wilsternetter from a distance of ca. 30 m. Passing flocks of golden plovers are attracted from a distance by the wilsternetter using calls made on a special flute and the birds are then lured towards the net by strategically placed, stuffed decoys. Single birds, or small flocks of plovers that are attracted to the area are captured in the net as it comes rapidly toward them in mid-air. In the winter months up to the 1950s, this form of hunting was the livelihood of several hundred people in the north of The Netherlands. In 1978, commercial wilsternetting was outlawed. Since then, 1,000-3,000 Golden Plovers have been netted, banded and released annually by a dedicated group of ca. 20 licensees (Jukema *et al.* 2001).

RESULTS OF THE INTERVIEWS

The interviewed wilsternetters all report the regular catching of distinct small and dark plovers, usually after several days of frost, when the Eurasian Golden Plovers had already left the grasslands and people started skating on canals and lakes. Despite the isolation in which these people worked and the lack of training in identification, their accounts show a remarkable degree of agreement which can be summarized as follows.

The small and dark plovers were much more easy to extract from the meshes of the net than Eurasian Golden Plovers and were about 20-25% smaller. They had a relatively dark belly and breast, and dark gray underwings (note that these birds must have been in winter plumage). This made several wilsternetters think that they were covered by ash or dirt. Their backs were quite strongly stippled with golden spots and had more "shine", and their plumage was denser with more down, than Eurasian Golden Plovers. They were also more difficult to pluck than Eurasian Golden Plovers. Although smaller in size, they were always very fat and yielded market prices similar to Eurasian Golden Plovers. When plucked for the pot and quite unlike Eurasian Golden Plovers, the subcutaneous fat layer needed to be removed before cooking to avoid a greasy taste. In one case, they were put on a grill to reduce the amount of fat before eating.

Near the town of Hindeloopen at the Zuiderzee (a large Dutch estuary that was closed off from the sea in 1932 and is now known as Lake IJsselmeer), the small and dark plovers were known to sometimes roost in wet meadows inside the dike at spring tides, and when they did, they were often in the company of Dunlin (*Calidris alpina*). This is not something that Eurasian Golden Plovers are ever known to do. Nonetheless, very few small and dark plovers were captured in such situations.

The small and dark plovers flew in tighter flocks that were more maneuverable than those of Eurasian Golden Plovers. The birds reacted readily to the calls of Eurasian Golden Plovers as imitated by wilsternetters. Their own calls were a little different than those of Eurasian Golden Plovers. They were always caught in midwinter after several days of frost, i.e. by the time that all Eurasian Golden Plovers would have left the region, as they still do today (Jukema *et al.* 2001). Indeed, up to the 1940's they could reliably be waited for when the cold winter-weather set in, apparently after the birds had started moving away from their normal coastal winter habitat. Rather than being caught by the thousands per season, as was the case with Eurasian Golden Plovers, they were caught in tens and sometimes in hundreds. (Note that more detailed scrutiny and further questioning has indicated that the maximum daily catch totals listed in Jukema [1987b] may have resulted from confusion with the Eurasian species, and are thus no longer considered valid.)

IDENTIFICATION

The relatively small body size and dark undersides indicate that the wilsternetters either refer to the American Golden Plover (*Pluvialis dominica*), or the Pacific Golden Plover (Hayman *et al.* 1986). The presence of extensive gold-stippling on the basic plumage and the similarity of the call to that of Eurasian Golden Plovers suggest that the Pacific rather than the American Golden Plover is involved (e.g., Byrkjedal and Thompson 1998). Also, American Golden Plovers breed in areas in arctic U.S. and Canada where no other European wintering shorebird species breeds (Piersma and Wiersma 1996; Piersma *et al.* 1996), whereas Pacific Golden Plovers in the western part of their breeding range (between the Urals and Anabar River on the Yamal, Gydan and Taimyr Peninsulas, Russia), considerably overlap with Eurasian Golden Plovers (Byrkjedal and Thompson 1998).

That the wilsternetters were indeed catching Pacific rather than American Golden Plovers, is confirmed by nine accepted records from the north of The Netherlands between 1890 and 1940, all obtained by wilsternetters (Fig. 1), and which are preserved as museum specimens (Fig. 2) (van Oort

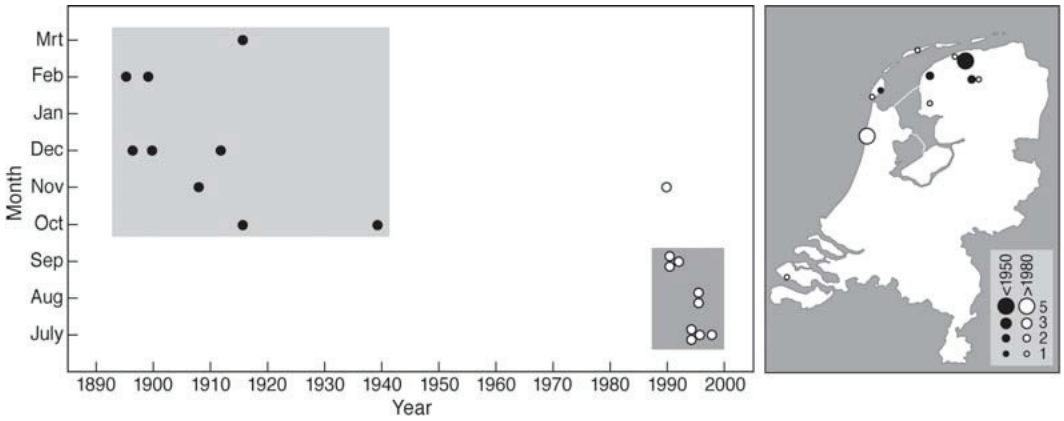

Figure 1. Occurrence during time of all accepted historical records of Pacific Golden Plover in The Netherlands in the 19th and 20th century. Modified after van den Berg and Bosman (1999).

1926; Roselaar 1990; van den Berg and Bosman 1999). During the same period, only a single American Golden Plover was collected—in November 1900 (Roselaar 1990). All specimens of Pacific Golden Plovers were collected in October-February and of the nine, six are probably juveniles and three adult (pers. obs.; Roselaar 1990: caption and photo 167, p. 229). There were no noticeable differences in body size between the few specimens collected in The Netherlands and those collected in the non-breeding season in Indonesia (Roselaar 1990; pers. obs.). Due to the condition of the study skins, it was impossible to properly verify whether contour feathers were indeed denser in the Dutch winter birds compared to the tropically wintering ones.

DISCUSSION

According to the wilsternetters, Pacific Golden Plovers have become rare in The Netherlands since the Second World War. This is confirmed by the paucity of reports since 1940 (Fig. 1). Despite increased awareness among the wilsternetters over the last 25 years, during which time no fewer than 27,000 Eurasian Golden Plovers were captured and processed by knowledgeable observers (Jukema *et al.* 2001), only two occurrences have been reported. One was an unconfirmed, orally reported catch of more than ten birds in December 1972 or 1973, and the other an independently confirmed identification of a single juvenile captured in November 1990 (included in Fig. 1). Recent reports uniquely refer to single (juvenile) birds observed by bird watchers in late summer. These sightings probably reflect the recent surge in observer effort specifically devoted to finding rare species (van den Berg and Bosman 1999).

Bearing in mind that any evidence involving field identification of American and Pacific Golden Plovers need to be viewed with some skepticism, given the difficulties of telling them apart, reports are rare in the rest of Europe (Lewington *et al.* 1991). Up to the early 1970s there is a single report from Poland and three from the island of Heligoland in the German Bight (Glutz von Blotzheim *et al.* 1975). In southern Sweden there is a single report in 1893 and four sightings in late summer from 1976 to 1988 (Sveriges Ornitologiska Förening 1990). Up to the 1980s, three sightings were reported in Norway, 13 in Finland, two in Denmark and two in Sicily (Lewington *et al.* 1991). There are three early reports from England. About 15 "Asiatic Golden Plovers" from Norfolk were brought to the London Leadenhall Market in December 1874 (Whitherby *et al.* 1940). On 23 April 1914, a male and two females were shot on a salt marsh in Sussex (Parkin 1914). On 20 September 1915, three with the same sex composition were shot on a salt marsh in Kent (Ford-Lindsay 1916). Between 1958

Figure 2. Photograph of an early 20th century museum specimen of a (juvenile) Pacific Golden Plover in comparison with a skin of an Eurasian Golden Plover. Photograph by Jan van de Kam, made in the Fries Natuurmuseum, Leeuwarden.

and 1985, there were seven records along the eastern coast of the British Isles, of which five were in late summer and two in winter (Dymond *et al.* 1989).

In the early 20th century, Pacific Golden Plover must have been a regular enough occurrence in the northern Netherlands to be part of the normal narratives of life on the northern Dutch countryside (Dorhout 1942; Eenshuistra 1973). In fact, in 1908 it was suggested that many Pacific Golden Plovers were missed among the Eurasian Golden Plovers in autumn and winter because of the similarity in their appearances (Snouckaert van Schauburg 1908). According to one of the wilsternetters, the Pacific Golden Plovers have been in decline since the closure of the Zuiderzee. Others believe they disappeared at the end of the Second World War. Now they are but a legend among the surviving wilsternetters.

The accounts leave us with the following possibilities. (1) As the small sample of museum specimens is biased towards juveniles, the occurrences of Pacific Golden Plovers may represent regular influxes of juveniles. Over the last 50 years such influxes ceased due to population changes in the breeding areas. (2) The Pacific Golden Plovers recorded in the late 19th and early 20th century in the southern North Sea region constituted a genuine and possibly genetically distinct wintering population. The mere presence of both age-categories might support the latter explanation. Moreover, the Pacific Golden Plovers wintering in The Netherlands appeared to show adaptations to cold (a thick and rather downy plumage) and unpredictable feeding conditions (a large fat store in midwinter). These adjustments are absent in the Pacific Golden Plover that have been studied in much warmer areas in the Indo-Pacific (Johnson *et al.* 1989) and Australia (Barter 1988). However, rather than representing genetically programmed adaptations, the adjustments could also be plastic responses to a novel, northern environment.

In this context it is interesting that the Pacific Golden Plover occurring in The Netherlands could not just have been birds from the central Indo-Pacific region that made mirror-image navigational errors of the kind documented in passerine migrants (DeSante 1973; Diamond 1982; Hampton 1997). Birds from western breeding areas in Taimyr making such left-right errors would end up in Eastern Africa rather than The Netherlands (Fig. 3). Interestingly, the mirror image of a migration from Taimyr to The Netherlands would bring birds to southern California, which is exactly the area along the Pacific coast of the American continent where Pacific Golden Plovers (usually juveniles) are most often seen (Garrett and Dunn 1981; Paulson 1993; Small 1994; Johnson and Connors 1996).

The absence of catches of Pacific Golden Plover by wilsternetters in autumn and spring can readily be explained by the spatial separation of the netters and the birds (the wilsternetters occurring only in inland grassland, the plovers on the seaside of the dike). They only coincide during the first few days of winter when the plovers apparently started to overfly inland areas, probably on southbound flights. It is unclear where such flights would have brought them, but coastal areas around the Mediterranean, at distances of 1,000-1,500 km that are easily reached by fat shorebirds. One should appreciate how easy it would have been, especially for a shorebird species normally occurring only in estuarine habitats, to have been missed by the few, usually city-bound, naturalists that existed 100 years ago in the then vast area of the Zuiderzee and Wadden Sea. These people would not have had much chance, or the inclination, to roam where only fishermen go, especially in winter.

In summary, oral history backed up by published sightings and a few museum skins indicate the disappearance of a temperate-winter adapted and southwesterly migrating population of the otherwise (sub-) tropical wintering and south-southeasterly migrating species of Pacific Golden Plovers. If their apparently unique life-history features warranted subspecific recognition, we could even call it an extinction. Such cryptic extinctions are more difficult to detect than extinctions of "proper" species (BirdLife International 2000), but may be commoner than we believe

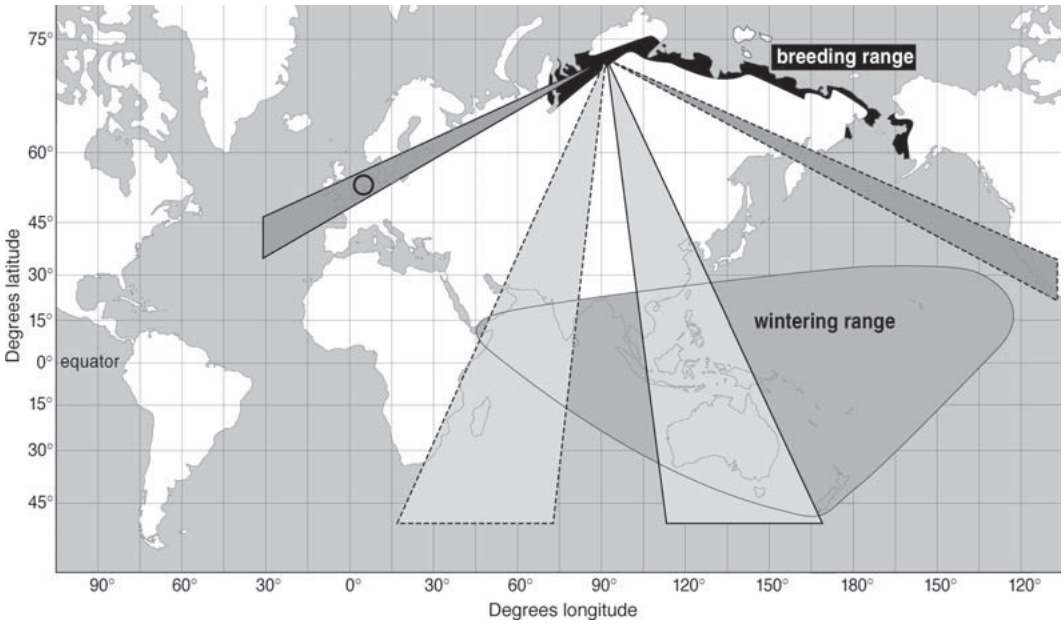

Figure 3. Mercator-projected map of the core-breeding range (dark shading; from Byrkjedal and Thompson 1998) and the current wintering ranges (light shading; from Hayman *et al.* 1986) of Pacific Golden Plovers, along with suggested mirror-image migration paths originating from western breeding grounds in Taimyr Peninsula, Siberia. The wintering location in The Netherlands is indicated with an open circle. The possible migration path of a Dutch wintering population is mirrored and ends in southern California. The arc to the south-southeast covers the migratory direction of the majority of present-day Pacific Golden Plovers and finds a mirror image with a route to East Africa.

(Hughes *et al.* 1997). The role of Dutch engineering in the reclamation of the Zuiderzee, a major estuarine system in The Netherlands, is intriguing, but probably beyond investigation.

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